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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,407	02/27/2004	Masahiro Katsumura	PC 3216.01 US	4536
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/787,407

Applicant(s)

KATSUMURA, MASAHIRO

Examiner

ANCA EOFF

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CD/CD)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The foreign priority document JP 2003-052962, filed on February 28, 2003 was received and acknowledged. However, in order to benefit of the earlier filing date, a certified English translation is required.
2. Claims 1-3 and 6-9 are pending. Claims 4-5 are canceled.

Continued Examination Under 37 CFR 1.114

3. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 27, 2008 has been entered.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2 and 6-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Oosawa et al. (US Pg-Pub 2002/0086514).

Art Unit: 1774

With regard to claims 1-2 and 6-7, Oosawa et al. disclose a structure comprising, in order:

- a metal base (1) made of copper alloy (par.0031 and fig. 3A);
- a nickel film (2) (par.0031 and fig. 3A);
- a copper film (3) (par.0031 and fig. 3A);
- a photoresist film (4) (ar.0032 and fig. 3B).

The metal base (1) et al. is equivalent to the substrate of the instant application and it is made of copper alloy. Oosawa et al. does not specifically disclose the type of copper alloy but copper alloys comprising more than 50% by weight of Cu (Z=29) are well-known in the art, as evidenced by Dutta et al. (US Patent 5,008,734) in column 3, lines 23-24.

The Ni film (2) and the Cu film (3) are equivalent to the surface layer area of the instant application, wherein the substrate is positioned on a side opposite to said photoresist film and the surface area layer is comprised of a plurality of thin films, such as a film (2) comprising 100 % Ni (Z=28) and a film (3) comprising 100% by weight of Cu (Z=29).

The fact that the substrate is used for "electron beam information recording" is an intended use and adds no patentable weight to the claim, therefore the structure comprising the metal base (1), Ni film (2), Cu film (3) and photoresist film (4) of Oosawa et al. is equivalent to the substrate of the instant application.

Since the Ni film (2) and the Cu film (3) are made of the same materials as the surface layer area of the instant application and, absent a record to the contrary, it is the

Art Unit: 1774

examiner's position that the Ni film (2) and the Cu film (3) have the capability of suppressing enlargement of a scattering distribution diameter of electrons spread inside by irradiation of an electron beam from a resist film side .

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). (MPEP 2112)

6. Claims 1-2 and 7- 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Romankiw (US Patent 3,853,715).

With regard to claims 1-2 and 7-8, Romankiw discloses a structure comprising, in order :

- a substrate (2) (column 2, line 66 and fig.1);
- a thin layer of adhesion metal (4), which may be made of niobium Nb (column 3, lines 1-2 and fig.1);
- a metallic layer (6), which may be made of Pt (column 3, line 8 and fig.1);
- a photoresist (8) (column 3, line 16 and fig. 1, wherein fig. 1 shows the resist pattern (8) formed from the photoresist (8) by a lithographic method).

The substrate (2) of Romankiw is equivalent to the substrate of the instant application.

The Nb layer (4) and the Pt layer (6) are equivalent to the surface layer area of the instant application, wherein the substrate is positioned on a side opposite to said photoresist film and the surface area layer is comprised of a plurality of thin films, such as a film a film (4) comprising 100% Nb ($Z=41$) and a film (6) comprising 100 % Pt ($Z=78$).

The film (6) comprising 100 % Pt ($Z=78$) is equivalent to the thin film of the plurality of thin films of the surface layer area which is in contact with the resist film of the instant application. The film (4) comprising 100% Nb ($Z=41$) is equivalent to the thin film in the plurality of thin films of the surface layer area other than the thin film of the plurality of thin films of the surface layer area which is in contact with the resist film of the instant application.

The fact that the substrate is used for "electron beam information recording" is an intended use and adds no patentable weight to the claim, therefore the structure comprising the substrate (2), the films (4), (6) and the photoresist layer (8) of Romankiw is equivalent to the substrate of the instant application.

Since the Nb layer (4) and the Pt layer (6) are made of the same materials as the surface layer area of the instant application and, absent a record to the contrary, it is the examiner's position that the Nb layer (4) and the Pt layer (6) have the capability of suppressing enlargement of a scattering distribution diameter of electrons spread inside by irradiation of an electron beam from a resist film side (MPEP 2112).

Art Unit: 1774

7. Claims 1-2, 7 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamada et al. (US Patent 6,326,621).

With regard to claims 1-2, 7 and 9, Kamada et al. disclose a structure comprising, in order :

- a substrate (101) (column 4, line 9 and fig. 2a);
- a conductive Pt film (102) (column 4, line 10 and fig. 2a);
- a pyroelectric $\text{Pb}_{0.9}\text{La}_{0.1}\text{Ti}_{0.975}\text{O}_3$ film (103) (column 3, lines 46-48, column 4, lines 27-28 and fig. 2b);
- a photoresist spin-coated on the pyroelectric film (103) (column 4, lines 47-49).

The substrate (101) of Kamada et al. is equivalent to the substrate of the instant application.

The Pt film (102) and the pyroelectric film (103) are equivalent to the surface layer area of the instant application, wherein the substrate is positioned on a side opposite to said photoresist film and the surface area layer is comprised of a plurality of thin films, such as a film (102) comprising 100 % Pt (Z=78) and a film (103) comprising 59% by weight of Pb (Z=82).

The pyroelectric film (103) comprising 59% by weight of Pb (Z=82) is equivalent to the thin film of the plurality of thin films of the surface layer area which is in contact with the resist film of the instant application. The Pt film (102) comprising 100% Pt (Z=78) is equivalent to the thin film in the plurality of thin films of the surface layer area other than the thin film of the plurality of thin films of the surface layer area which is in contact with the resist film of the instant application.

The fact that the substrate is used for "electron beam information recording" is an intended use and adds no patentable weight to the claim, therefore the structure comprising the substrate (101), the films (102) and (103) and the photoresist layer of Kamada et al. is equivalent to the substrate of the instant application.

Since the Pt film (102) and the pyroelectric film (103) are made of the same materials as the surface layer area of the instant application and, absent a record to the contrary, it is the examiner's position that the Pt film (102) and the pyroelectric film (103) have the capability of suppressing enlargement of a scattering distribution diameter of electrons spread inside by irradiation of an electron beam from a resist film side (MPEP 2112).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta et al. (US Patent 5,521,034)

Hotta discloses a substrate having a photosensitive polyimide resin deposited thereon (column 4, lines 36-53), the photosensitive polyimide resin being equivalent to the resist film of the instant application.

The substrate can be made of Cu (Z=27), Ni (Z=28), Fe (Z=26) (column 2, lines 1-2).

Hotta does not disclose a surface layer area as required by the instant application.

However, because the substrate is made of a material that lowers the scattered beam energy dispersion, it is the examiner's position that the upper surface of the substrate in the proximity of the photosensitive resin layer acts as a surface area layer.

The fact that the substrate is used for "electron beam information recording" is an intended use and adds no patentable weight to the claim, therefore the structure comprising the substrate and the photosensitive polyimide resin of Hotta is equivalent to the substrate of the instant application.

Response to Arguments

10. Applicant's arguments filed on February 27, 2008 and March 05, 2008 have been considered but are moot in view of the new grounds of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

Art Unit: 1774

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. E./

Examiner, Art Unit 1795

/Cynthia H Kelly/

Supervisory Patent Examiner, Art Unit 1795